REMARKS

Reconsideration of the above-identified application is respectfully requested.

In the Office Action of October 19, 2004, the Examiner first rejected Claims 1 and 28 under 35 U.S.C. §103(a), as being allegedly unpatentable over applicants' admitted prior art ("AAPA") in view of Sawyer (U.S. Patent No. 6,603,972 B1) (hereinafter "Sawyer"). Further in the Office Action, the Examiner rejected Claims 2-5 and 29-32 as allegedly unpatentable over AAPA and Sawyer, as applied to Claims 1 and 28, in further view of Van Renesse (U.S. Patent No. 6,724,770) (hereinafter "Van Renesse").

The Examiner further objected to Claims 6-13 and 33-40 as being dependent upon a rejected base claim, but indicated that they would be allowable if rewritten in independent form including all of the limitation of the base claim and any intervening claims.

The Examiner did further indicate that Claims 14-27 were allowable.

With respect to the rejection of Claims 1 and 28 under 35 U.S.C. §103(a), as being allegedly unpatentable over AAPA and Sawyer, applicants respectfully disagree in view of remarks herein.

The present invention as set forth in Claims 1 and 28 is directed to a group-based multicast messaging system and method implementing a dedicated logger member for logging all multicast messages sent in the system, wherein the system and method reliably delivers messages from senders to receivers of the group. The system includes a) a receiver device detecting one or more missing messages from a sequence of multicast messages sent to members of said group; b) soliciting retransmissions of missing messages to another member or logger of said group; and, c) determining the receiver's missing messages as fresh or stale, and one of: enabling repair of fresh missing messages by said another member in a first message recovery phase or, enabling repair of stale missing messages by a logger in a second

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message recovery phase, wherein reliable delivery of messages in the multicast messaging system is ensured. The invention thus merges the ideas of logging messages and using random neighbors for repairing messages and further provides a stronger reliable delivery guarantee (see specification page 3, lines 6-11).

Respectfully, with regard to the rejections of Claims 1 and 28, the Examiner's reliance upon Sawyer is misplaced. First of all, Sawyer is not directed to multicast messaging systems, but rather a wireless communications system providing apparently a seamless hand-off of communication sessions over packet data networks. Thus, Sawyer is directed to non-analogous art. Further, the Examiner's reliance on Sawyer's alleged teaching of characterizing data packets as "stale" is not the same as a message status becoming stale according to the teachings of the invention as set forth in Claims 1 and 28. That is, the concept of "fresh"/"stale" allegedly suggested in Sawyer is not the same as the concept of fresh or stale in the present invention as claimed. In the context of the present invention, fresh and stale mean whether a message is buffered at some receivers or not. A "fresh" message refers to the availability of a multicast message buffered at a receiver device to repair missing messages at other receivers. Thus, in the claimed first recovery phase, a random gossip member of the multicast group is able to retransmit the message to the member missing the message. After a fixed period of time "t" as determined by other receivers, when the message is no longer buffered at any receiver, the message is considered stale (e.g., it may have been garbage-collected and removed from receiver buffers so as to preserve buffer space; see present specification at page 8, lines 11-17). In this instance, a second recovery phase is implemented, as claimed in Claims 1 and 28, whereby a logger member of the multicast group is solicited to retransmit the missing message. Thus, a repair of the stale missing message is

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performed in the second recovery phase. It is thus the case that, in the present invention, "fresh" and "stale" refer to whether a received message is stored in a multicast group member's receiver buffer.

Respectfully, the Sawyer reference, in combination with the AAPA, does not teach or suggest the ability to repair stale messages in the context of a gossip based multicast protocol as in the present invention set forth in Claims 1 and 28. First of all, "stale" in Sawyer refers to a delayed receipt in an end-to-end communications protocol, and not the absence of a message in a multicast group member's receiver buffer after an elapsed time period in which messages are removed from the receiver buffer as in the present invention. In support of this, the Examiner is referred to Sawyer at col. 4, lines 49-53, where it is stated that data packets that have not been delivered in real-time (or close to real-time), e.g., due to network delays, are deemed irrelevant (Sawyer uses the term "stale") and may be discarded. Thus, in this respect, Sawyer teaches away from the present invention in that delayed data packets that are stale, i.e., not received in or close to real-time, are discarded —not repaired as in the present invention.

Thus, respectfully, the teachings of Sawyer do not provide the motivation to combine with the AAPA to provide the concept of determining a receiver's missing messages as fresh or stale, and one of: enabling repair of fresh missing messages by said another member in a first message recovery phase or, enabling repair of stale missing messages by a logger in a second message recovery phase in order to ensure reliable delivery of messages in the multicast messaging system. Thus, the Examiner is respectfully requested to withdraw the rejections of Claims 1 and 28 under 35 U.S.C. §103(a). Accordingly, the Examiner is respectfully requested to withdraw the rejection of all claims dependent thereon.

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With respect to the rejection of Claims 3 and 30, the Examiner is respectfully referred to the arguments set forth hereinabove concerning the status of missing messages as being fresh or stale. Respectfully, the concept of fresh or stale in the context of the present invention is indicative of whether the message still resides in a multicast group member's receive buffer, e.g., by performing a time comparison as claimed. That is, the invention determines whether a fixed period of time "t" has elapsed as determined by individual receivers, i.e., different receivers may choose a different value of t according its buffering capabilities. Thus, when a message has been removed from a buffer, e.g., garbage-collected, after the fixed time period, it is considered stale. This is not taught nor suggested by Sawyer. While the Examiner essentially alleges that Sawyer suggests the comparison of fixed time thresholds due to language present in "real-time" or close to real-time, there is no positive suggestion of such a time comparison being made, as claimed in Claims 3, 30. Furthermore, in the passage cited by the Examiner in Sawyer at col. 4, lines 49-53, the use of the term real-time or close to real-time in Sawyer refers to arrival times of packets in a network communications protocol, and subsequent treatment of the arrived packet depending upon whether it is a voice-communication or a non-voice data transmission. In contrast, as mentioned herein, determination of fresh or stale in the present invention does not refer to arrival times of packets, but rather characterizations of how long a message has resided in a buffer.

Respectfully, Van Renesse is of no help in this regard, as it, at best, provides a teaching according to the prior art "Pbcast" system- with no teaching or suggestion of characterizing a received message as stale, and subsequent repairing of stale messages.

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Thus, the Examiner is respectfully requested to withdraw the rejections of Claims 2-5 and 29-32 under 35 U.S.C. §103(a).

In view of the foregoing remarks herein, it is respectfully submitted that this application is in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and a Notice of Allowance be issued. If the Examiner believes that a telephone conference with the Applicants' attorneys would be advantageous to the disposition of this case, the Examiner is requested to telephone the undersigned, Applicants' attorney, at the following telephone number: (516) 742-4343.

Respectfully submitted,

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